


HASO4

126 VIS

The Optical Metrology
The Big Guy

High Spatial Resolution
Alignment-Free
Wavefront Sensor



 compatible



HASO4 126 VIS



The HASO4 126 VIS Shack-Hartmann wavefront sensor provides high-resolution and broadband for maximum precision and versatility.

The second generation was released in 2020, and features the new SpotTracker technology. It provides absolute wavefront and tilt information, eliminating alignment requirements.



This instrument is compatible with the **Optical Engineer Companion** metrology system.

APPLICATIONS

Successfully used in the most demanding of applications in optical metrology, microscopy, and laser diagnostics, the HASO4 126 VIS enables you to :

- + Quantify the optical system's aberrations
- + Align the system to ensure that it performs at its best
- + Predict the optical system's performance in terms of focalization capability or imaging quality
- + Quantify the effects of temperature and gravity on the system's performance
- + Verify that the optics comply with specifications
- + Directly measure the optical system's wavelength dependency
- + Pilot a wavefront corrector to change the system's aberrations
- + Check whether the optical mount overly distorts the optics

FEATURES

The HASO4 126 VIS enables you to perform multiple functions by combining :

- + Direct wavefront acquisition of converging and diverging F/5 beams with an accuracy of $\lambda/100$ rms, including astigmatism and high-order aberrations
- + Beam collimation with an accuracy better than 300 m radius of curvature
- + Control and adjustment of axial laser beam deviation better than $3\mu\text{rad}$ rms
- + 3D localization of a focal spot up to $0.1 \mu\text{m}$ rms and $1 \mu\text{m}$ rms for lateral and axial resolution, respectively (0.1 NA beam)
- + Patented technology for simultaneous and independent measurements of phase and intensity



SPECIFICATIONS

OPERATING SPECS

Aperture dimension	13.78 x 10.21 mm ²
Number of microlenses	170x126
Maximum acquisition frequency	30 Hz
Calibrated wavelength range	400 - 750 nm
Minimum power	0.15 nW
External trigger TTL signal	

OPERATING SYSTEM

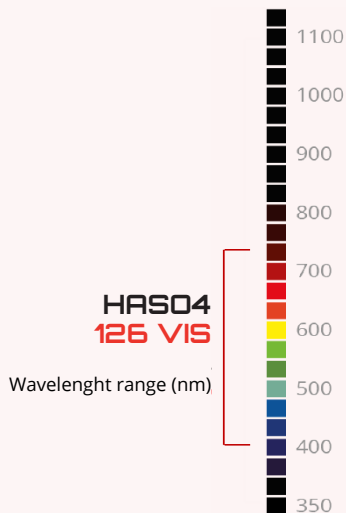
Windows 7 & 10

OPTICAL SPECS

Repeatability	< $\lambda/200$ rms
Wavefront measurement accuracy in absolute mode	
• λ between 400-600nm	≤ 6 nm rms
• λ between 600-750nm	$\sim \lambda/100$ rms
Spatial sampling	$\sim 80 \mu\text{m}$
Tilt dynamics range	$> \pm 3^\circ$
Focus dynamics range	± 0.010 m to $\pm \infty$

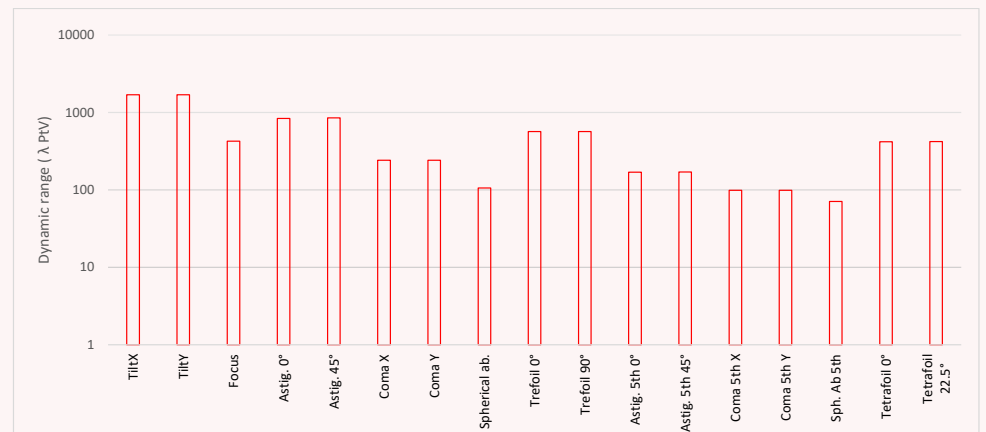
MISC

Dimension/weight for USB version	42 x 47x 60 mm ³ / 185 g
Working temperature	15 - 30 °C
Interface / Power consumption	USB 3.0 / 2.9 W

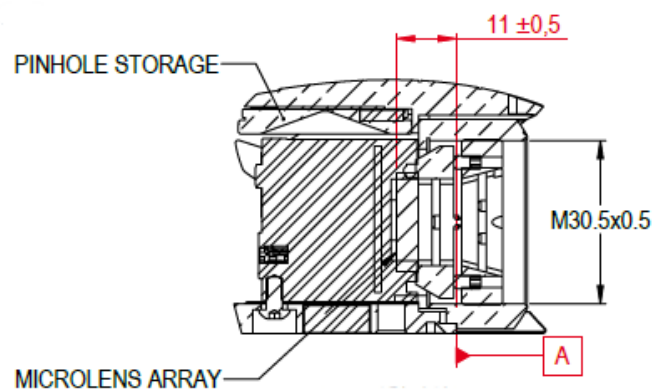
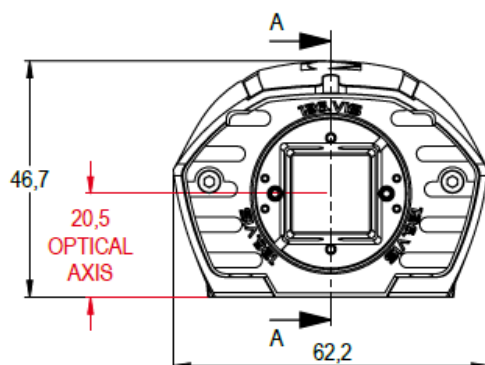


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Dynamic range



DIMENSIONS (mm)

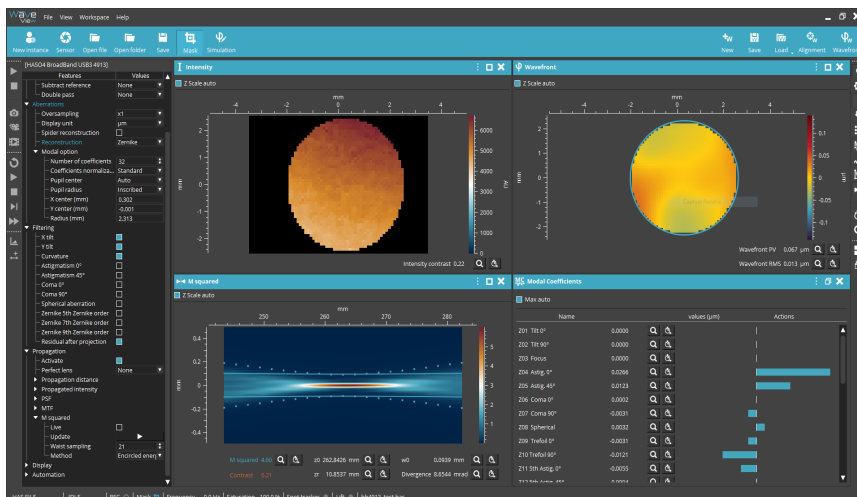


SOFTWARE

WAVEVIEW 4 Metrology Software

WaveView is the most advanced wavefront measurement and analysis software. It offers more than 150 features and tools optimized for a wide range of highly demanding applications.

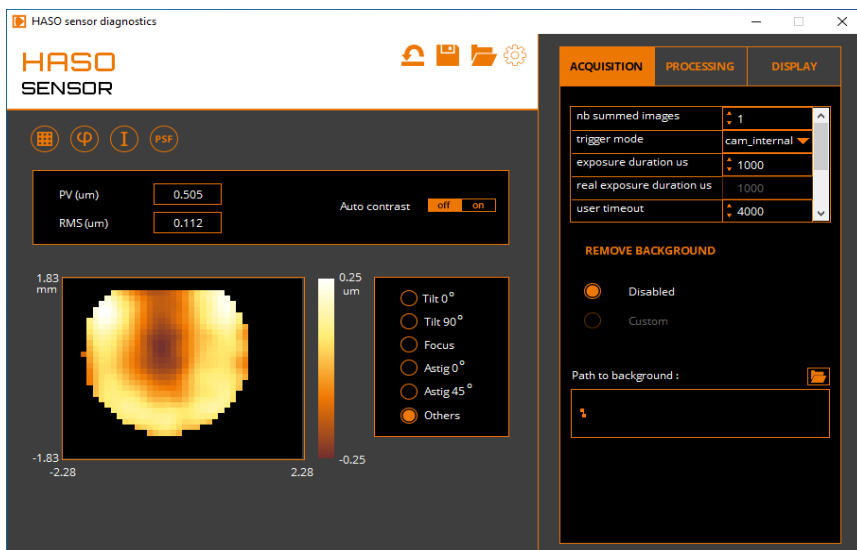
- + Extensions for PSF, MTF, Msquare and Strehl ratio
- + Zoom, History and script modes
- + Optional SDK in C/C++, LabVIEW and Python



WAVETUNE 4 Adaptive Optics Software

WaveTune is a unique software that seamlessly combines wavefront measurement and correction features with extensive instrument diagnostics. It is perfectly adapted to our HASO wavefront sensors, ILAO Star, and MIRA0 deformable mirrors, as well as to a wide range of active components.

- + Compatible with any deformable mirror or SLM
- + Closed-loop or open-loop
- + Optional SDK in C/C++, LabVIEW



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